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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,864	05/21/2001	Man-Duck Kim	CCENG.001AUS	9494

20995 7590 08/27/2004

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EXAMINER

AHN, SAM K

ART UNIT	PAPER NUMBER
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2637

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/863,864

Applicant(s)

KIM, MAN-DUCK

Examiner

Sam K. Ahn

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Korea on 08/05/2000. It is noted, however, that applicant has not filed a certified copy of the 20-2000-0022380 application as required by 35 U.S.C. 119(b).

Drawings

2. Figures 1A, 1B, 2 and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 5-8 and 38 are objected to because of the following informalities:

In claim 5, line 2, delete "modem" and insert "modem."

In claim 38, line 1, delete "the first component" and insert "the component of the voice signal".

In claim 38, line 2, delete "a component" and insert "the component".

Claims 6-8 directly or indirectly depend on claim 5.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 30 and 38-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 30 recites the limitation "the predetermined speed" in line 1, claim 38, recites the limitation "the second signal" in line 3, and claims 39-47, recite the limitation "the first component" or "the second component" in line 1, respectively.

There is insufficient antecedent basis for the limitation in the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4,9-22,27-29 and 31-54 are rejected under 35 U.S.C. 102(e) as being anticipated by Chaplik et al, USP 6,693,916 B1, (Chaplik).

Regarding claim 1,2,32,48,49 and 54 Chaplik discloses a signal processing apparatus and a method for use in telecommunication over a transmission line (see Figs.3 and 4), wherein a transmission line (connecting 11 and 12) having a first (11,24,26) and second terminals (12,20,22), the first terminal comprising: a first circuit (50) having an output terminal (coupled to 14), the first circuit configured to receive a first signal (data signal from 16) from a modem (SDSL signal from a modem), the first signal comprising a first frequency band (baseband or DC to hundreds of kHz, note col.3, lines 44-46) and pass a component of the first signal having a higher frequency than a first predetermined frequency (cutoff frequency greater than frequency of the low pass filter); and a second circuit (20) having an output terminal (coupled to 14), the second circuit configured to receive a second signal (voice signal from 15) comprising a second frequency band (zero to 3.4KHz, note col.7, lines 66-67) overlapping with at least a portion of the first frequency band (note col.4, lines 21-26), the second circuit configured to pass a component of the second signal having a lower frequency than a second predetermined frequency cutoff frequency higher than the upper voice frequency, note col.8, lines 17-29); herein the output terminal of the first circuit is connected to the output terminal of the second circuit (14), and transmit

the combined components to the second terminal. (note col.7 line 24 – col.11, line 58)

Regarding claim 3, Chaplik teaches all subject matter claimed. Chaplik further discloses a modem (24 in Fig.4)and wherein the output of the modem is connected to the first circuit (10 of Fig.3 comprised in 11 of Fig.4).

Regarding claim 4, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the modem comprises a Symmetric Digital Subscriber Line modem (24 in Fig.4).

Regarding claims 10,38,42 and 50, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the first circuit is configured to substantially reduce power of the component of the first signal sufficient to avoid interference with the second signal. (note col.8, lines 17-29 and col.11, lines 20-38)

Regarding claims 9,11-13, 39-41 and 51-53, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the first circuit is configured to reduce power of a component of the first signal having a frequency range of 2 - 50 kHz, 3.4-20kHz and 5-10kHz to an amount of 3 - 80 dB. (see Table 1)

Regarding claim 14, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the cutoff frequency may be selected to reduce interference, and therefore by selecting 2kHz in the high pass filter (as shown in Table 1) the filtering section in the first circuit substantially cuts off power of all voice frequencies of the first signal.

Regarding claim 15, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the first circuit comprises a High Pass Filter. (note col.11, lines 20-38)

Regarding claim 16, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the second predetermined frequency is between 2 kHz and 20 kHz. (see Table 1)

Regarding claims 17 and 43, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the second circuit is configured to substantially reduce power of the component of the second signal sufficient to avoid interference with the first signal. (note col.8, lines 17-29)

Regarding claims 18-20,37 and 44-46, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the second circuit is configured to reduce power of a component of the second signal higher than having a frequency range of 2 – 20 kHz, 3.4-15kHz, and 5-10 kHz to an amount of 1 - 30 dB. (see Table 1)

Regarding claims 21 and 47, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the second circuit is configured to cut off power of a component of the second signal higher than the second predetermined frequency. (note col.8, lines 17-29)

Regarding claim 22, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the cutoff frequency may be selected to reduce interference, and therefore by selecting appropriate value in the low pass filter

(as shown in Table 1) the filtering section in the first circuit substantially cuts off power of all non-voice frequencies of the second signal.

Regarding claim 27, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the second circuit comprises a Low Pass Filter. (note col.9, lines 15-28)

Regarding claim 28, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the second circuit comprises a splitter or a combiner. (11 in Fig.4)

Regarding claim 29, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the apparatus is configured to support a communication speed (384 kbps) faster than a predetermined speed (by frequencies generated ranging from zero to 192 kHz). (note col.2, line 55 – col.3, line 2)

Regarding claim 31, Chaplik teaches all subject matter claimed. Chaplik further discloses wherein the first circuit is directly connected to the second circuit. (see Fig. 3)

Regarding claims 33 and 34, Chaplik teaches all subject matter claimed. Chaplik further discloses receiving a signal having a voice component and a data component from the transmission line, cutting off the voice or data component, and outputting the data or voice component to a computing device or to a telephone. (see Fig.4 where the combiner cuts off voice component and outputs to the SDSL modem and cuts off data component and outputs to a phone)

Regarding claims 35 and 36, Chaplik teaches all subject matter claimed. Chaplik further discloses receiving a signal having a voice component and a data component from the transmission line, cutting off the voice or data component, and outputting the data or voice component to an information network or to a PSTN. (see Fig.4 where the combiner, 12, cuts off voice component and outputs to the SDSL modem connected to the internet, in Fig.2, and cuts off data component and outputs to telephone switch and PSTN, 190 in Fig.2)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaplik et al, USP 6,693,916 B1, (Chaplik)

Regarding claim 23, Chaplik teaches all subject matter claimed, as applied to claim 2. Chaplik further teaches wherein the cutoff frequency or the first and second predetermined frequency in the first and second circuit may be selected, as shown in Table 1. Although Chaplik does not explicitly teach wherein the first and second predetermined frequency is the same, it would have been obvious to

one skilled in the art at the time of the invention, since the predetermined frequencies taught by Chaplik is a matter of engineering design choice.

Depending on the predetermined frequencies selected, the response would vary as shown in Table 1. And again, therefore, depending on the results desired, amount of interference acceptable, one skilled in the art may select the first and second predetermined frequencies to be equal.

7. Claims 5 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaplik et al, USP 6,693,916 B1, (Chaplik) in view of Williamson et al., USP 6,477,249 B1 (Williamson).

Regarding claims 5 and 24-26, Chaplik teaches all subject matter claimed, as applied to claim 3 or 2. Chaplik discloses wherein the splitter or combiner is a separate element from the SDSL modem (24 in Fig.4). However, Chaplik does not explicitly teach wherein the first circuit and second circuit are incorporated into the modem. Williamson teaches signal splitter and filter in a DSL environment (see Fig.1), and further teaches that the splitter may be separated from the modem, or may be incorporated into the modem. (note col.5, lines 31-37) Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Chaplik's splitter or combiner to be incorporated into the modem, as taught by Williamson, for the purpose of saving space at the premise the modem is to be installed.

8. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaplik et al, USP 6,693,916 B1, (Chaplik) in view of Ayoub et al., USP 6,674,845 B2 (Ayoub).

Regarding claims 6-8, Chaplik teaches all subject matter claimed, as applied to claim 5. However, Chaplik does not teach wherein a transformer is comprised in the first circuit. Ayoub teaches a DSL splitter coupled to the DSL interface or first circuit including a transformer, which inherently has an air gap. (see Fig.3 and note col.1, lines 39-45) Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Chaplik's DSL combiner to include the transformer between 14 and the filter (50) for the purpose of line conditioning. And although Chaplik in view of Ayoub do not explicitly teach the specification of the size of the air gap is 0.01-1 mm and the capacitor whose capacitance is 0.1 –0.001 uF, Ayoub already teaches the air gap and the capacitance, as shown in Fig.3. Having the specification as recited would have been a matter of engineering design choice. Therefore, it would have been obvious to one skilled in the art at the time of the invention to construct the system of Chaplik and Ayoub using the line transformer with recited specification for the purpose of using a line transformer which may be abundantly available in the market.

9. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaplik et al, USP 6,693,916 B1, (Chaplik) in view of Henderson et al., USP 6,754,233 B1 (Henderson).

Regarding claim 30, *assuming that the claim depends on claim 29*, Chaplik teaches all subject matter claimed, as applied to claim 29. Chaplik discloses wherein changing the cutoff frequency may increase the communication speed. However, Chaplik does not explicitly teach wherein the predetermined speed is 1 MHz. Henderson teaches a splitter in a DSL environment wherein the system including SDSL protocol supports speed of 1.1MHz. By assigning the predetermined speed to be 1 MHz, one skilled in the art may analyze that the system taught by Henderson exceeds the predetermined speed. Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Chaplik's teaching by increasing the predetermined speed to be 1 MHz, for the purpose of increasing the data rate supported by the modem.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Palm teaches filtering in the DSL environment using high pass filtering and low pass filtering.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Sam Ahn** whose telephone number is **(703) 305-0754**.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Jay Patel**, can be reached at **(703) 308-7728**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

P.O. Box 1450

Alexandria, VA 22313-1450

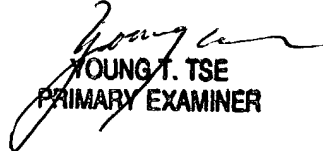
or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Sam K. Ahn
8/20/04


YOUNG T. TSE
PRIMARY EXAMINER